

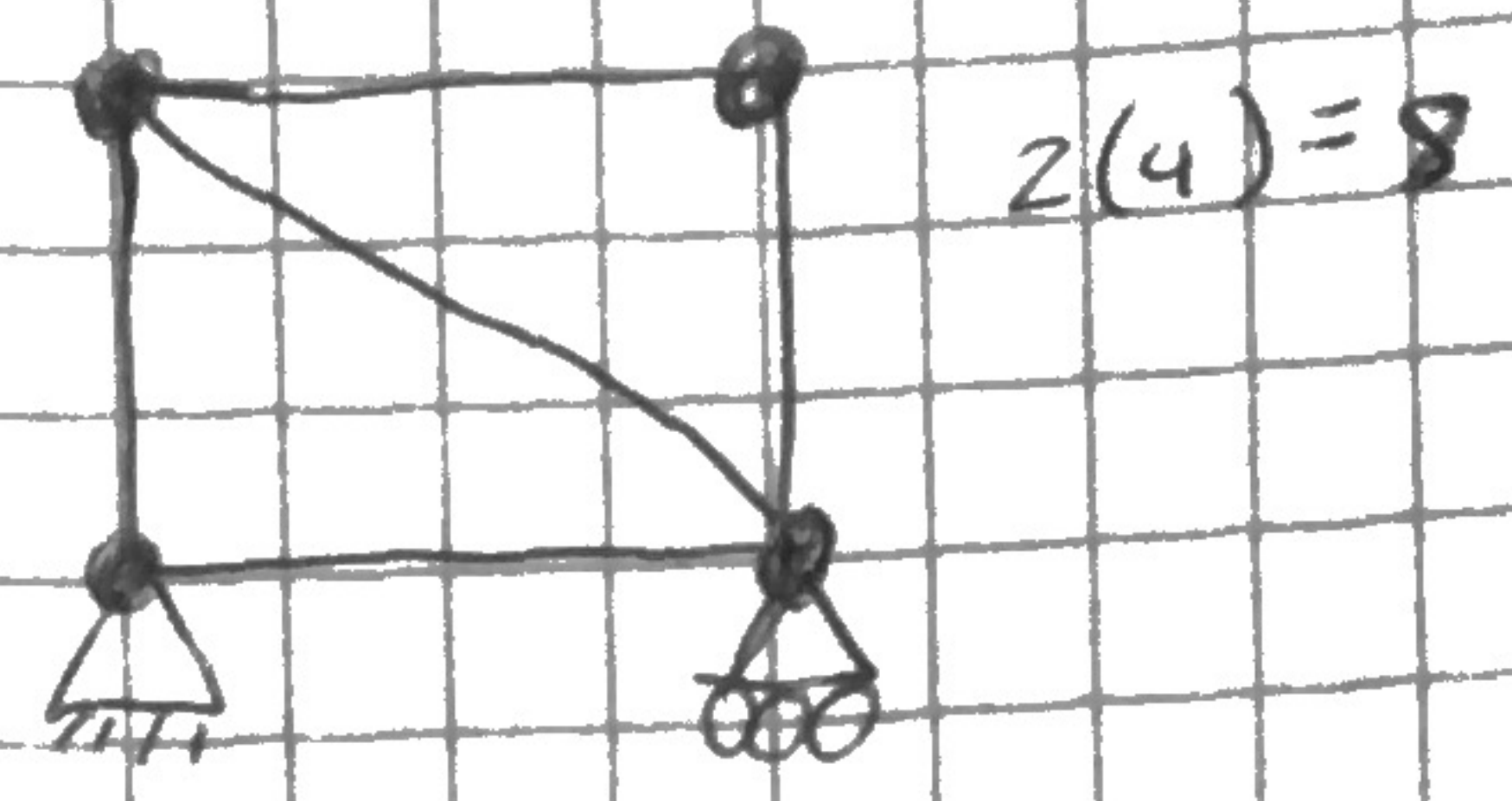
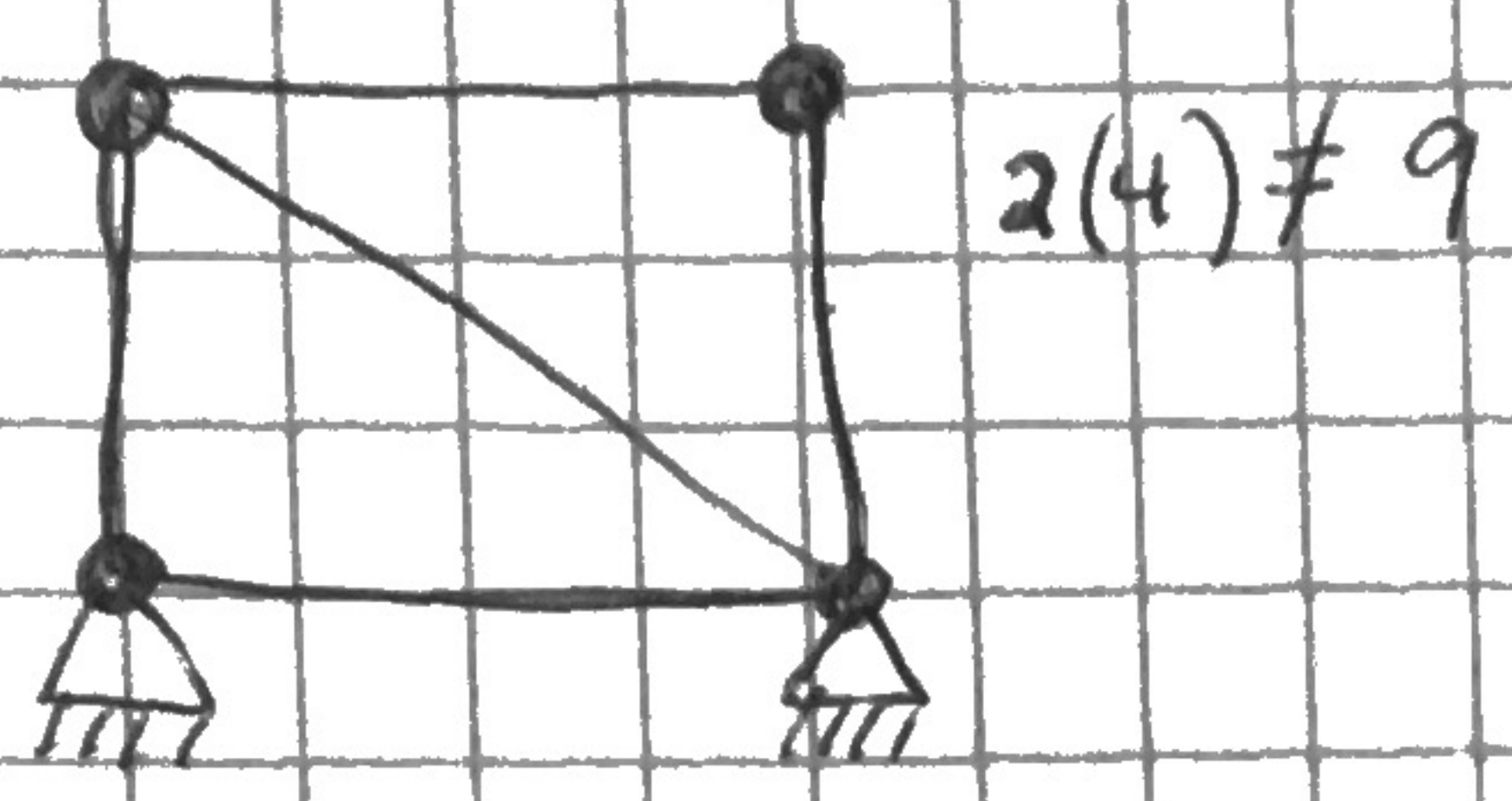
$$S = \frac{0}{4} \quad C = \frac{4}{4} + \frac{4}{4} \quad M = F \cdot D$$

Activity 2.1.7

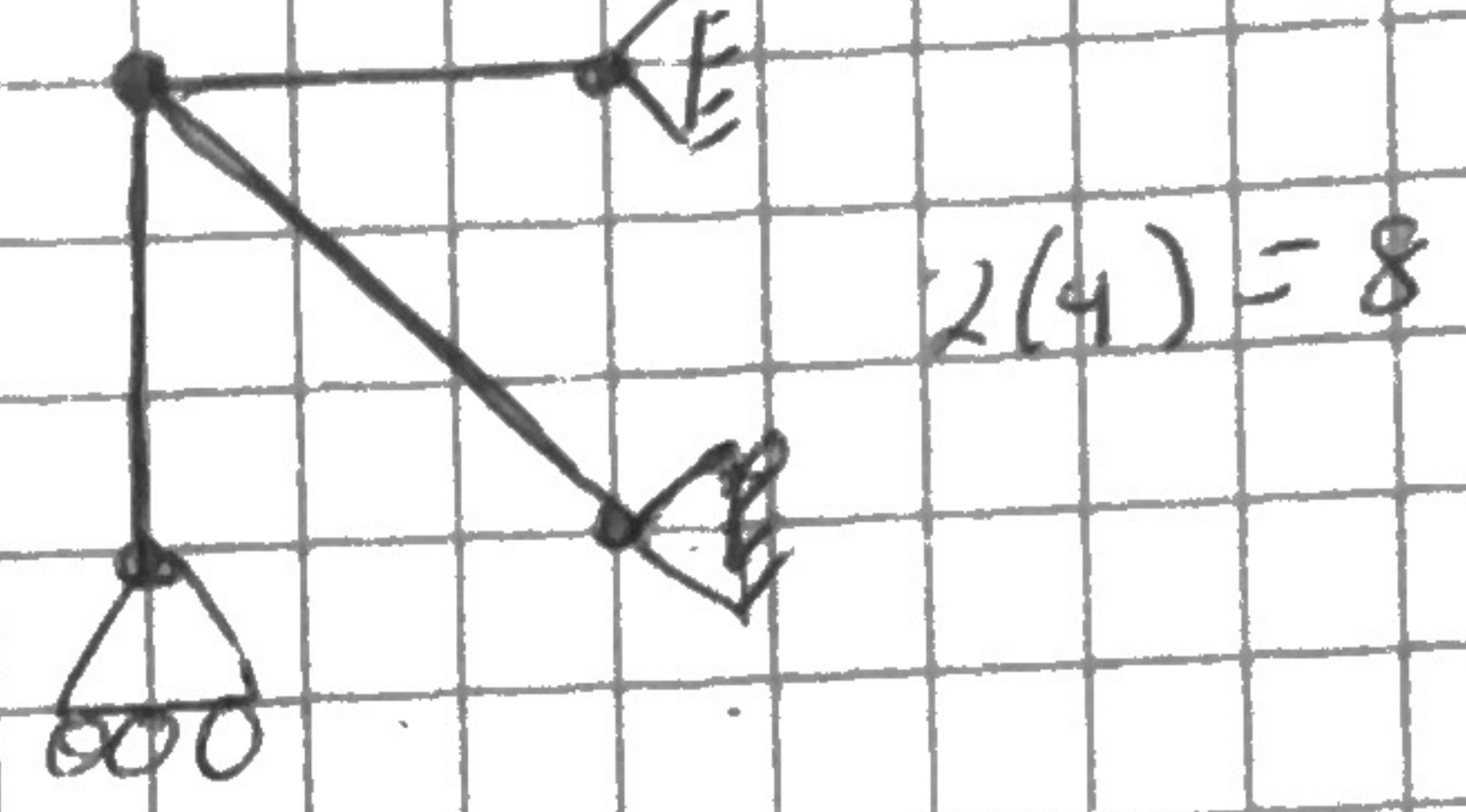
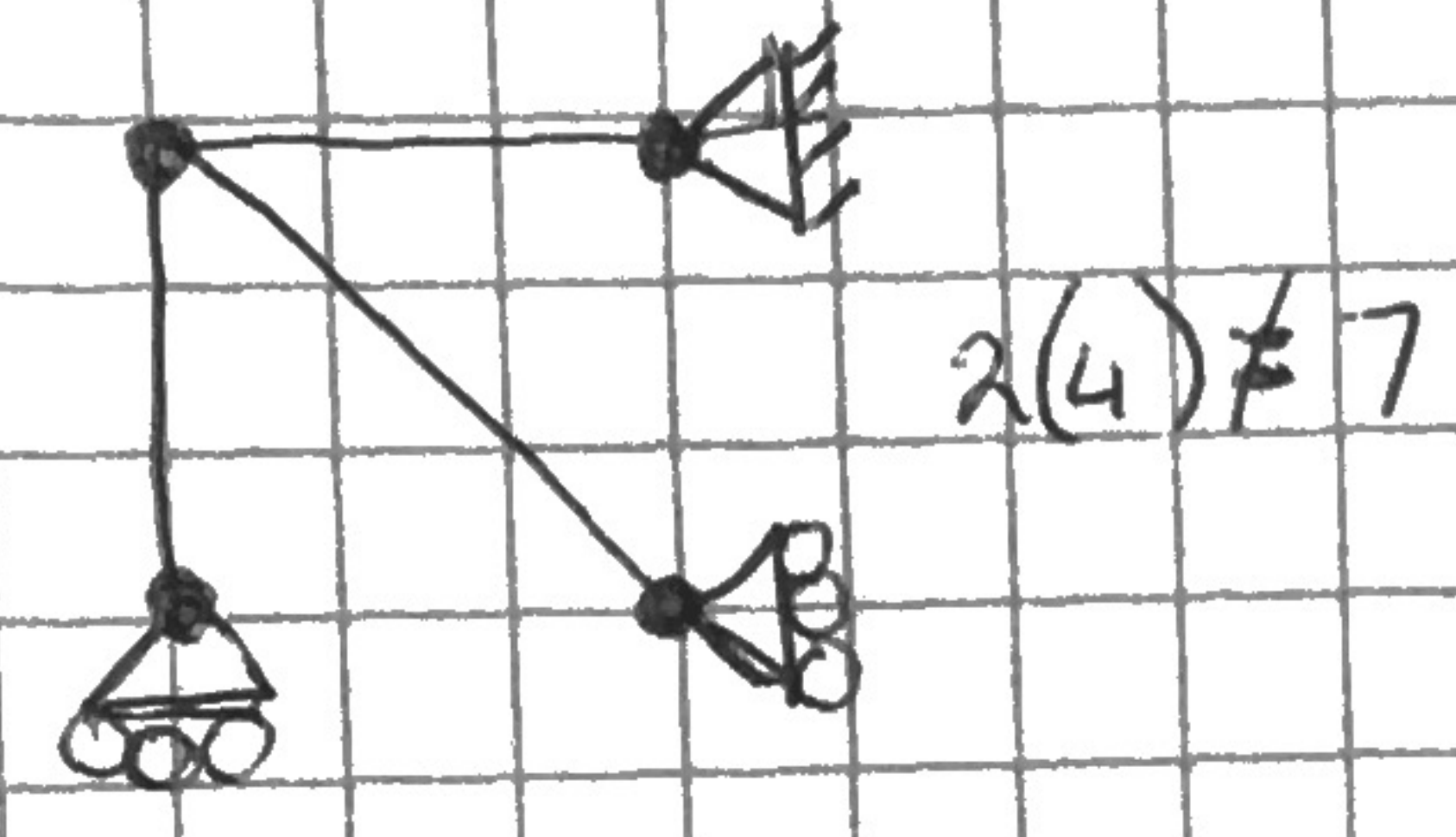
Activity: Calculating Truss Forces

$$2J = M + R$$

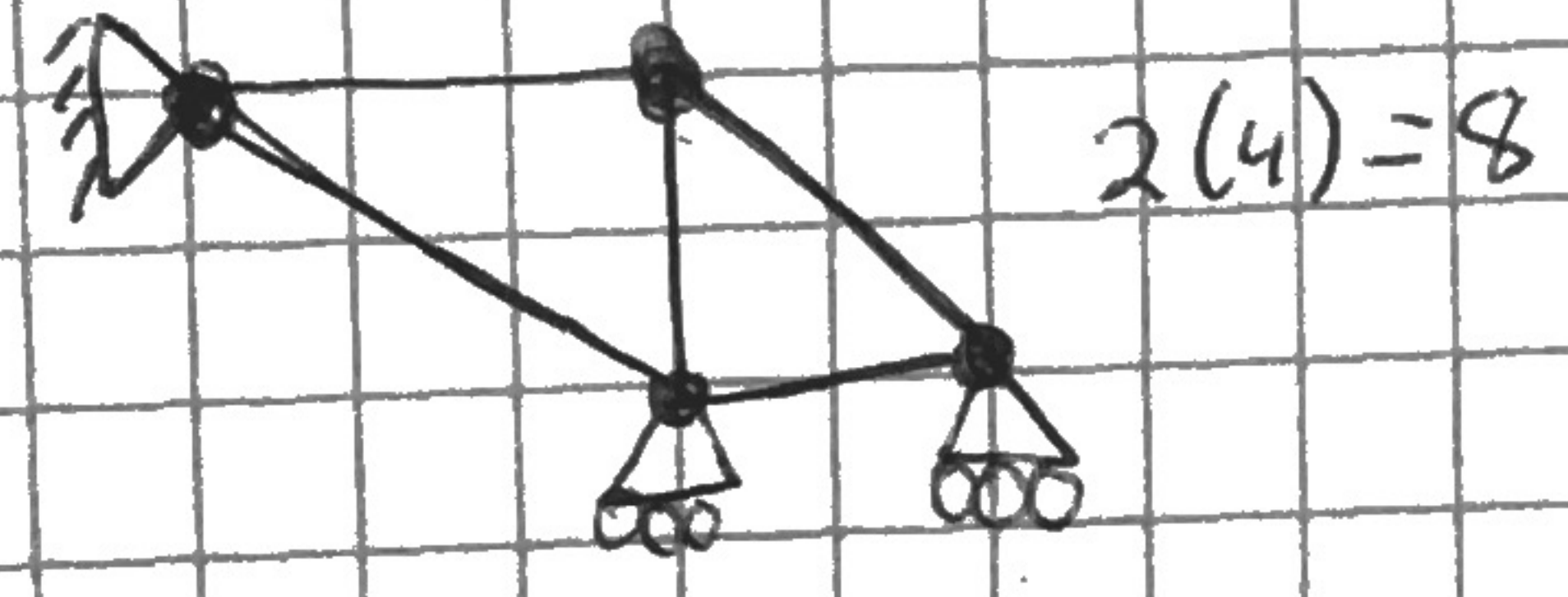
Truss #1



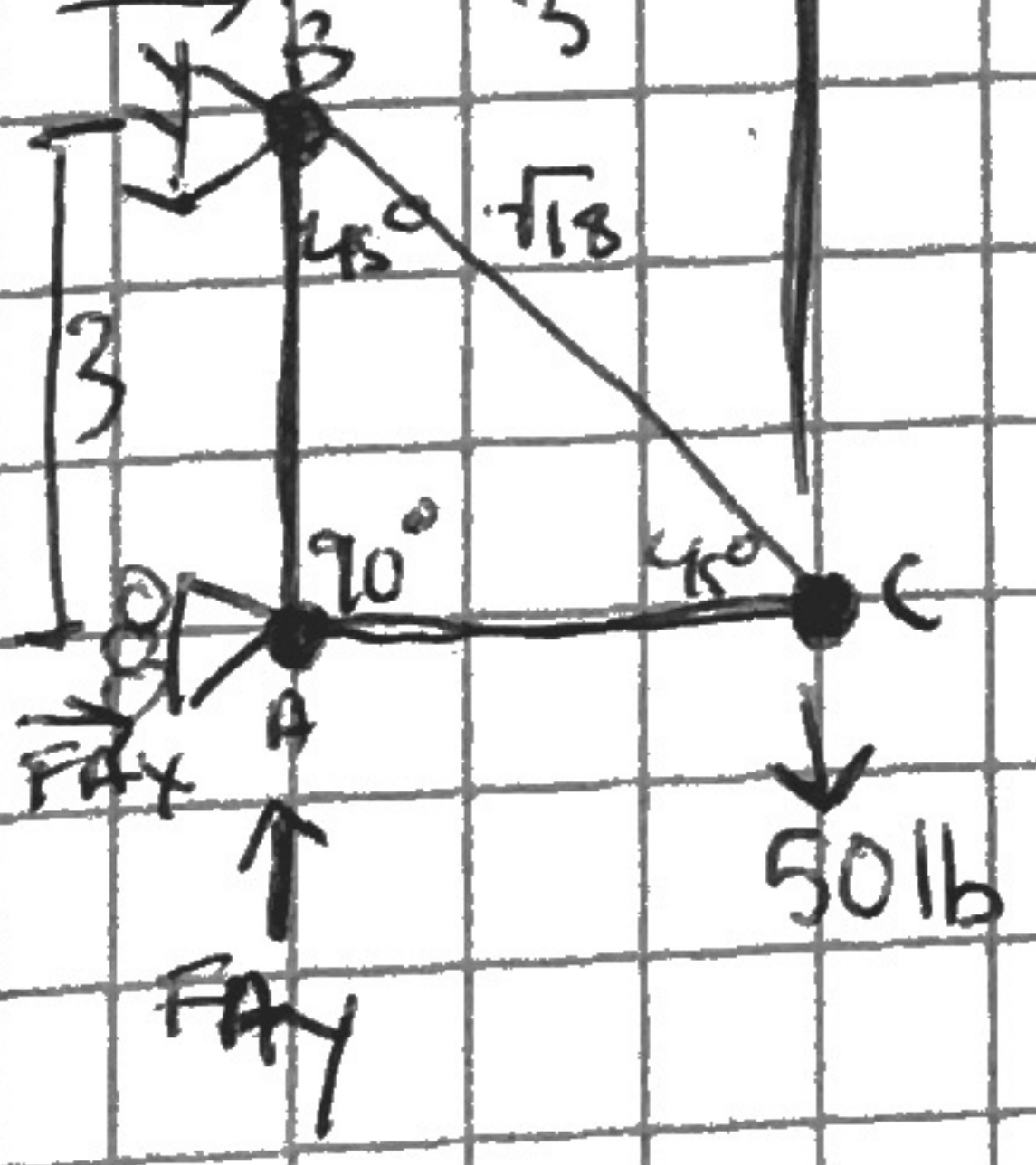
Truss #2



Truss #3



Truss #4



~~AC = 3.50 = 1.50166~~

$$\tan \theta = \frac{3}{3}$$

$$\theta = 45^\circ$$

$$3^2 + 3^2 = c^2$$

$$9 + 9 = c^2$$

$$\sqrt{18} = c^2$$

$$c = 4.24$$

$$\sum M = 0$$

$$\sum F_x = 0$$

$$\sum F_y = 0$$

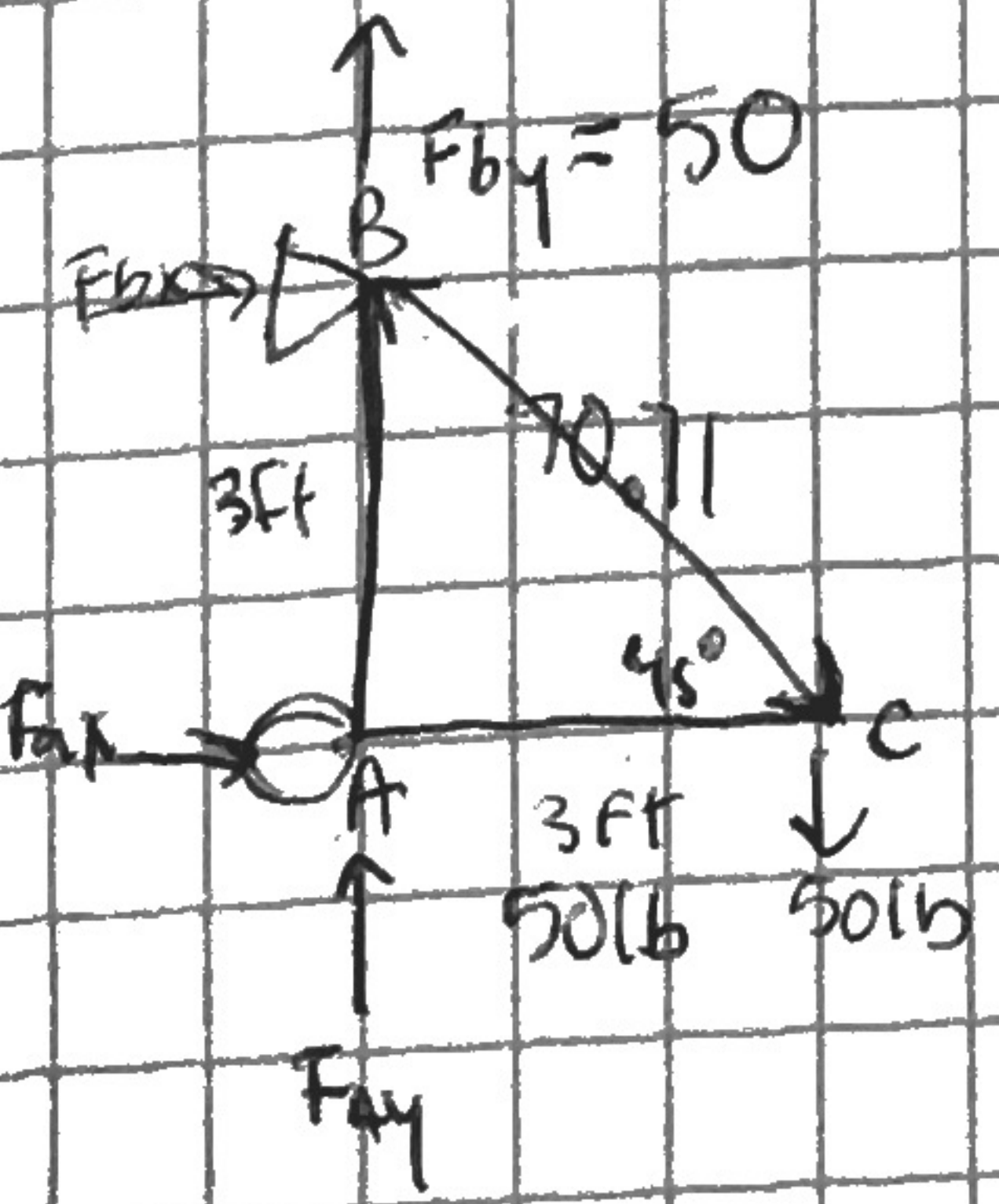
$$-50 + 70.71 \sin 45 = 0$$

$$+50 \quad +50$$

$$BC \sin 45 = +50$$

$$\sin 45 \quad \sin 45$$

$$BC = 70.71$$



$$-50 + F_{by} = 0$$

$$+50 \quad +50$$

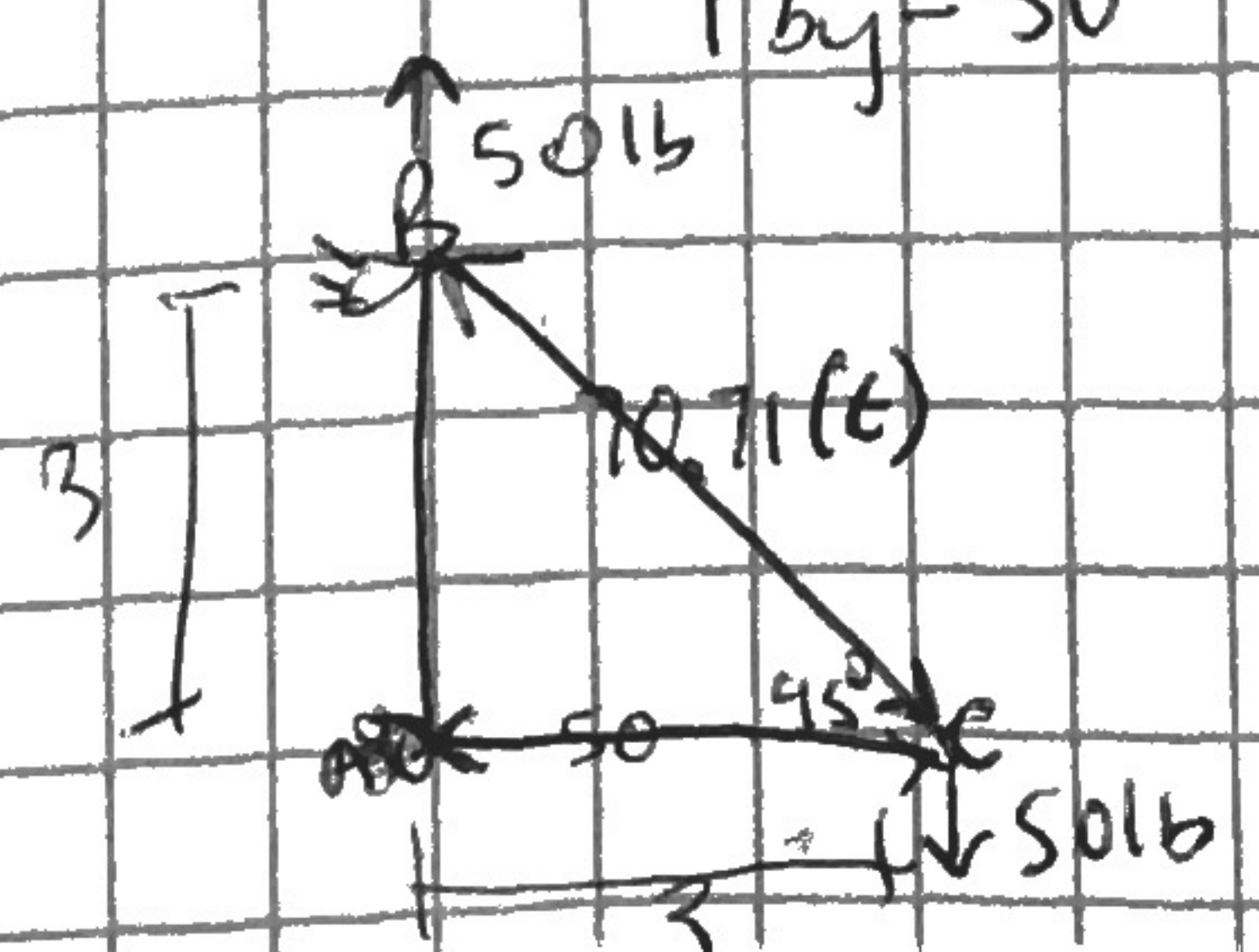
$$F_{by} = 50$$

$$70.71 \text{ lb} (\cos 45) - C_A = 0$$

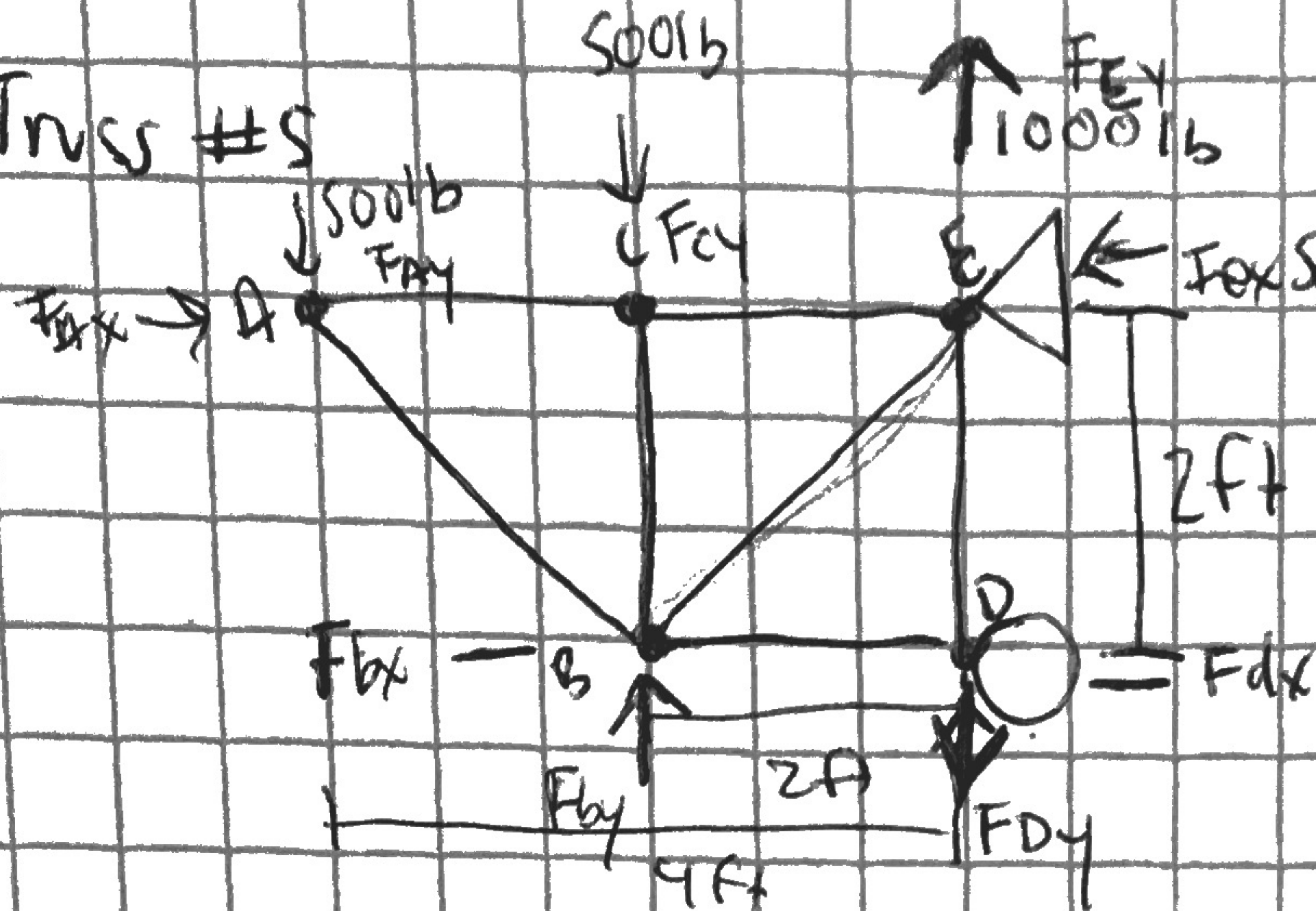
$$+C_A \quad +C_A$$

$$70.71 \text{ lb} (\cos 45) = C_A$$

$$C_A = 50 \text{ lb}$$



Truss #5



$$2(500) = 1000$$

$$F_{Ex} 500 lb - 500 + -500 + 1000 = 0$$

$$-500 + F_{EA} \sin 90 = 0$$

$$F_{EA} \sin 90 = 500$$

$$\sin 90 \quad \overline{\cos 90}$$